

REMARKS

Claims 7, 8 and 10 have been amended. Claim 29 has been added. Claims 1-6 and 11-28 have been withdrawn from consideration as to a non-elected invention. Claims 7-10 and 29 are now pending. Applicant reserves the right to pursue the original claims and other claims in this and other applications. Applicant respectfully requests reconsideration of the above-referenced application in light of the amendments and following remarks.

At the outset, Applicant acknowledges with appreciation that claim 9 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 9 depends from claim 8 which depends from claim 7. The allowable subject matter of claim 9 has been rewritten as new claim 29. The Examiner's approval is solicited.

Claim 7 is objected to because of an informality. Claim 7 has been amended to recite "at least one fuse element not to be selectively disconnected is not etched, and wherein said at least one fuse element selected to be disconnected is at least partially etched." The Examiner's approval is solicited.

Claim 7 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Janai. The rejection is respectfully traversed.

The cited reference does not anticipate the claimed invention. Janai does not teach a method of manufacturing a semiconductor device comprising "forming a plurality of fuse elements on a semiconductor wafer substrate; forming at least one dielectric layer over said plurality of fuse elements with a plurality of openings over respective fuse elements; forming a layer of etching barrier resin in an opening corresponding to a location of at least one fuse element not to be selectively

disconnected; and implementing dry and/or wet etching steps using said layer of etching barrier resin as a mask such that said at least one fuse element not to be selectively disconnected is not etched, and wherein said at least one fuse element selected to be disconnected is at least partially etched," as recited in claim 7.

Janai does not teach forming a layer of etching barrier resin in an opening corresponding to a location of at least one fuse element not to be selectively disconnected. This allows the other fuse element, selected to be disconnected, to be partially etched. The layer of etching barrier resin is selectively formed on a portion at which the fuse element is not to be disconnected (Applicant's specification, pg. 21, paragraph 80). Janai discloses three methods, none of which anticipate or suggest Applicant's claimed method.

Janai's first method covers the semiconductor device with a radiation sensitive coating 900 that is laser ablative (Col. 9, line 67 through Col. 10, line 3). None of the fusible links 438 are etched (FIG. 5A). The second method exposes the device to a radiation source, such as a laser, to remove coating 900 (Col. 10, lines 4-6). The fusible link 438 that is selected to be disconnected, however, is not etched (FIG. 5B). Janai's final method etches layer 900 and the underlying fusible link portions 438 are removed (Col. 10, lines 4-6 and FIG. 5C). In other words, Janai discloses completely removing fusible element 438 and not etching at least a portion of it (FIG. 5C).

Jana discloses forming a radiation etch-resistant layer 900 over all of the fusible links 438 in openings 422 (FIGS. 5A-5C). Applicant's claimed method partially etches fuse element 41a that is selected to be disconnected (FIG. 1D), while the not to be selectively disconnected fuse element 41b is not etched. For example, Applicant's specification discloses a discharging head 11 that provides raw resinous materials as raw droplets 29 (FIG. 1B). The resinous material forms a layer of etching barrier resin

49 (FIG. 1B). Layer 49 is formed over fuse element 41b that is selected not to be disconnected (FIG. 1B). Layer 49 is not formed over fuse element 41a which is selected to be disconnected. Layer 49 is formed only over the fuse elements that are not to be disconnected.

As such, Janai does not teach “forming a layer of etching barrier resin in an opening corresponding to a location of at least one fuse element not to be selectively disconnected,” as recited in claim 7. Janai discloses forming layer 900 over all of fusible links 438 (FIGS. 5A-5C). Similarly, Janai does not teach that “at least one fuse element selected to be disconnected is at least partially etched,” as recited in claim 7. Janai discloses, in FIG. 5C, completely removing fusible link 438 during an etch. For at least these reasons above, Janai does not disclose Applicant’s claimed method.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Janai in view of Tateyama. The rejection is respectfully traversed.

Claim 8 depends from claim 7 and should be similarly allowable with claim 7 for at least the reasons provided above. Specifically, Janai does not teach “forming a layer of etching barrier resin in an opening corresponding to a location of at least one fuse element not to be selectively disconnected . . . [wherein] at least one fuse element selected to be disconnected is at least partially etched,” as recited in claim 7. Tateyama is relied upon for providing a discharging nozzle which discharges droplets of raw etching barrier resin, and adds nothing to rectify the deficiencies associated with Janai.

Further, there is no motivation to combine Janai and Tateyama. Janai relates to a method of forming fusible links 438 between semiconductor elements (Col. 6, lines 37-40). Tateyama relates to a coating method and apparatus for a semiconductor process, which can form a coating film having a uniform and thin thickness (col. 1,

lines 56-59). The two references are directed to entirely different problems in the semiconductor arena. The only thing shared between the two references is their respective semiconductor substrates on which their methods are carried out.

"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." M.P.E.P. § 2143.01 (emphasis added). The prior art is not suggesting the proposed combination; but, rather the claimed invention is the foundation for the combination. As noted above, the references are directed to solving different problems. In fact, Janai discloses that layer 900 "serves as a short term passivation layer." (Col. 9, lines 59-60). Portions of layer 900 are removed by a laser or etching. There is no motivation to have a smooth and uniform layer 900 since portions of it are removed.

It is also not proper to combine references where doing so "would require a substantial reconstruction and redesign of the elements shown in the primary reference [i.e., Janai] as well as a change in the basic principle under which the primary reference [i.e., Janai] construction was designed to operate." In re Ratti, 270 F.2d 810, 813, 123 U.S.P.Q. 349, 352 (C.C.P.A. 1959). The 'modification' proposed by the Examiner, in the rejection of claim 8, requires a substantial reconstruction and redesign of Janai's elements, and changes the basic principle under which Janai was designed to operate. Janai is designed to form fusible links 438. It is not directed to forming a coating film with a uniform and thin thickness.

Moreover, even if the references are combinable, which they are not, they still would not teach or suggest, that "the step of forming said layer of etching barrier resin further comprises: scanning at least one discharging nozzle for discharging raw etching barrier resin while discharging droplets of said raw etching barrier resin so as to replenish said opening corresponding to said location of said fuse element not to be

selectively disconnected, and hardening said raw etching barrier resin," as recited in claim 8.

The proposed combination would merely yield a uniform and thin layer 900. Janai discloses forming layer 900 over the entire structure, which includes all of fusible links 438. The combination would not form a layer of etching barrier resin corresponding to, e.g., selectively formed over, the location of a fuse element not to be selectively disconnected. These are additional reasons for the allowance of claim 8.

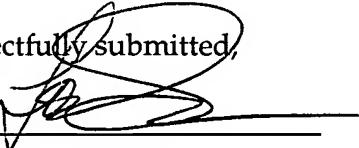
Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Janai in view of Kimura. The rejection is respectfully traversed.

Claim 10 depends from claim 7 and should be similarly allowable with claim 7 for at least the reasons provided above. Specifically, Janai does not teach "forming a layer of etching barrier resin in an opening corresponding to a location of at least one fuse element not to be selectively disconnected . . . [wherein] at least one fuse element selected to be disconnected is at least partially etched," as recited in claim 7. Kimura is relied upon for disclosing fuse elements comprising polysilicon, and adds nothing to rectify the deficiencies associated with Janai.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorney for Applicant